

REMARKS

Claims 1-24 remain pending in the application. Favorable reconsideration is respectfully requested in view of the above amendments and the following remarks.

The indication that claims 4, 9, 15 and 23 define patentable subject matter is noted with appreciation.

The abstract was objected to because of informalities. In response, the abstract has been amended to address the concerns expressed in the Action. Accordingly, it is respectfully requested that the objection to the abstract be withdrawn.

Claims 1-3, 8, 10-14 and 19-22 were rejected under 35 U.S.C. § 102(a) as allegedly being anticipated by EP 0 827 308 A2 to Cohen (henceforth, "Cohen"). This rejection is respectfully traversed.

The invention addresses problems that arise when it is desired to use a shared communication medium to communicate both synchronous and asynchronous data. If the medium is configured to support only circuit switched connections, the delivery requirements imposed by the synchronous data can be met; however, this is wasteful of medium resources when asynchronous data is transmitted, since the dedicated connection will often be left unused. Alternatively, configuring the medium to support only asynchronous data communication makes the most efficient use of the resource, but can result in unacceptable delivery times for the synchronous data.

The invention permits both synchronous and asynchronous communication links to be established on the same shared communication medium by dividing the communication medium into sequentially occurring time slots, and allocating some time slots for use as one

or more synchronous communications links, and allocating other time slots for use as one or more asynchronous communications links. In order to provide great flexibility in the allocation, the invention calls for the address of the intended recipient to be included in the transmission. The intended recipient can thereby recognize that the transmitted packet is intended for him. Moreover, other communication units need not keep track of whether that particular time slot is being used for synchronous or asynchronous transmissions, since in either case the fact that a different communication unit's address is included in the packet informs a unit that it is not the intended recipient and needn't be concerned with it.

Inclusion of the intended recipient's address in the transmitted packet itself also gives great scheduling flexibility to the master unit, which can decide on a per slot basis which client is to be addressed, and whether an asynchronous data transmission will, at least temporarily, replace an otherwise scheduled transmission on a synchronous link.

Accordingly, claim 1 defines a method for establishing a link on a shared communications channel divided into a plurality of time slots, the method comprising the steps of: establishing a synchronous communications link between a first and second communication unit; and communicating a first data packet on a first one of the set of time slots associated with the synchronous communication link from the first communication unit to the second communication unit by including an address associated with the second communication unit in the first data packet. (Emphasis added.)

Independent apparatus claims 12 and 22 similarly define the inclusion of a recipient's address in a data packet transmitted over a synchronous communication link.

It is well-established that "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The Cohen reference fails to meet this standard, and therefore fails to anticipate any of independent claims 1, 12 and 22 at least because it neither discloses nor even suggests "communicating a first data packet on a first one of the set of time slots associated with the synchronous communication link from the first communication unit to the second communication unit by including an address associated with the second communication unit in the first data packet." (Emphasis added.)

The Office relies on Cohen at column 4, lines 44-53 as allegedly showing this feature. This reliance is unfounded because Cohen's system does not include, as part of the communicated data packet, an address associated with the intended recipient. Instead, Cohen's system involves at least two different channels: one for transmitting control information downstream (see, e.g., Cohen at col. 3, lines 49-51) and a second channel for transmitting asynchronous or synchronous data from the client stations to the master station (see, e.g., Cohen at col. 3, lines 52-55). Importantly, Cohen employs a reservation allocation system in which client stations transmit a reservation request that informs the master station of the desired number of slots and whether asynchronous (ABR) or synchronous (CBR) data is to be transmitted. In response, the master station determines how the allocation will be made, and then informs the client of the reserved slots. In contrast to Applicant's claimed invention, Cohen's allocation response from the master station:

- 1) is not transmitted as a data packet on a time slot used for transmitting data, but is instead transmitted on the separate control channel (see, e.g., Cohen at column 15, lines 22-25); and
- 2) does not indicate by means of an included address that the present slot contains data for an intended recipient, but instead includes a time slot identifier that informs the recipient when it may begin its requested transmission. (See, e.g., Cohen at column 13, lines 13-16 (ABR allocation); column 13, lines 56-58 (ABR allocation); column 15, lines 22-25(CBR allocation).)

It is apparent, then, that when the text relied on by the Office at column 4, lines 44-53 states that the master station "subsequently sends a message to the client station including a start address for the reservation" (emphasis added), the so-called "start address" identifies a slot number within the frame structure, and does not in any way identify the client for whom the slot is reserved.

To the extent that the Office also relies on Cohen's Figure 4 in support of the rejection, this figure is merely a depiction of slot availability on the shared up-stream channel (see Cohen at column 5, lines 31-32). Presumably, the master station would store this information to enable it to make future slot allocations. Nowhere, however, does Cohen indicate that this information is transmitted to the client stations as part of the data packets, nor would this make sense in the context of Cohen's reservation allocation system.

For the foregoing reasons, independent claims 1, 12 and 22, as well as the dependent claims 2-3, 5-8, 10-11, 13-14, 16-21 and 24 which variously depend therefrom,

are believed to be patentably distinguishable over the Cohen patent. Withdrawal of the rejection of these claims under Section 102 is respectfully requested.

Claims 5-7, 16-18, and 24 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Cohen as applied to claim 3 above, and further in view of U.S. Patent No. 6,011,784 to Brown et al. (henceforth "Brown"). This rejection is respectfully traversed.

Claims 5-7, 16-18 and 24 variously depend from independent claims 1, 12 and 22, and are therefore patentably distinguishable over Cohen for at least the reasons set forth above. Brown fails to make up for the deficiencies of Cohen at least in that it neither discloses nor suggests "communicating a first data packet on a first one of the set of time slots associated with the synchronous communication link from the first communication unit to the second communication unit by including an address associated with the second communication unit in the first data packet."

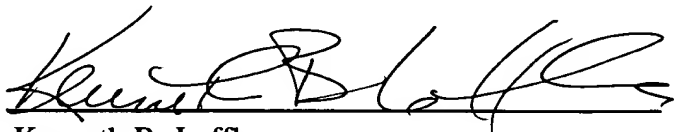
It is well established that, to establish a *prima facie* case of obviousness, it is required, *inter alia*, that the combination of the applied references must teach or suggest all the claim limitations. Since neither Cohen nor Brown disclose at least the feature discussed above, it is believed that the Office has failed to make out a *prima facie* case of obviousness of claims 5-7, 16-18 and 24. Therefore, it is respectfully requested that the rejection of these claims under Section 103 be withdrawn.

The application is believed to be in condition for allowance. Prompt notice of same is respectfully requested. In the event that the Examiner has any questions about this

application, he is kindly invited to contact the undersigned attorney at the telephone number listed below.

Respectfully submitted,

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Mark-up of Abstract

ABSTRACT OF THE DISCLOSURE

A method and apparatus are described establishing multimedia communications on a shared communications channel. A first [a] and a second communication unit, such as a master and slave unit, establish a synchronous communications link. Additional synchronous communications links may be established. A first data packet associated with the synchronous communication link is communicated to the second communication unit by including an address. Time slots reserved for the synchronous channel by the first unit are separated by a fixed time interval. One or more additional communications units may communicate over an asynchronous link established between the master and additional units using remaining time slots. Data packets may be communicated to additional units by including addresses associated with each additional units. The synchronous link may be interrupted with the asynchronous link by communicating an asynchronous data packet on a time slot reserved for the synchronous communications link. The asynchronous link may be a Time-Division duplex link for alternately transmitting and receiving on different ones of the remaining time slots. Asynchronous data packets communicated to additional units on remaining time slots. The master unit may poll each additional units for a response packet to the asynchronous data packet. On a Time-Division duplex link, additional units alternately receive the poll from the first communication unit and transmit the response packet on different ones of the remaining time slots.